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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/874,876

06/05/2001

Ajit Kumar Reddy

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05/05/2005

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EXAMINER

BURD, KEVIN MICHAEL

ART UNIT

PAPER NUMBER

2631

DATE MAILED: 05/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/874,876	Applicant(s) REDDY, AJIT KUMAR	
	Examiner Kevin M. Burd	Art Unit 2631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

1. This office action, in response to the amendment and the remarks filed 12/9/2004, is a final office action.

Response to Arguments

2. The drawings were received on 12/9/2004. These drawings are accepted.
3. The objection to claim 11 is withdrawn.
4. Applicant's arguments filed 12/9/2004 have been fully considered but they are not persuasive. Regarding the rejections of claims 1, 6, 7, 9, 10 and 14-16, in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., Applicant cites numerous passages of the specifications that describe the vector arithmetic structures performing functions and comprising components) are not recited in the rejected claims. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). For this reason and the reasons cited in the previous office action, the rejections of these claims are maintained.
5. Regarding the rejections of claims 2-4, 8, 11 and 12 under 35 USC 103(a), in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., Applicant cites numerous passages of the specifications that describe the vector arithmetic structures performing functions and comprising components) are not recited

in the rejected claims. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). In addition, in response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). Finally, Applicant states there is no motivation or suggestion to combine the references. As stated in the previous office action, Corleto discloses this method has reduced the complexity of the demodulation process thereby increasing efficiency and reducing hardware requirements (column 1, lines 55-65). For these reasons and the reasons stated in the previous office action, the rejections of these claims are maintained.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

5. Claims 1, 6, 7, 9, 10 and 14-16 are rejected under 35 U.S.C. 102(a) as being anticipated by the instant application's disclosed prior art (specifically figure 1).

Regarding claim 1, the instant application's disclosed prior art shows an encoder in figure 1. The encoder includes a constellation mapper (generator) 130 that is responsive to an input bit stream to produce an impulse comprising an in-phase and a quadrature component (page 1, lines 26-30). A pair of filters 140, 150 (vector arithmetic structures – VAS) adapts a respective one of in-phase or quadrature components to produced shaped components (page 1, line 31 to page 2, line 1). The outputs are combined 160 to produce an encoded bit stream (page 2, lines 1-4).

Regarding claim 6, the constellation of symbols comprises carrierless amplitude and phase symbols (page 1, lines 10-11).

Regarding claim 7, the constellation of symbols comprises QAM encoded symbols (page 1, lines 10-11).

Regarding claim 9, the pair of filters implement a filtering operation 9figure 1).

Regarding claim 10, the instant application's disclosed prior art shows a method for using an encoder in figure 1. The encoder includes a constellation mapper (generator) 130 that is responsive to an input bit stream to produce an impulse comprising an in-phase and a quadrature component (page 1, lines 26-30). A pair of filters 140, 50 (vector arithmetic structures – VAS) adapt a respective one of in-phase or quadrature components to produced shaped components (page 1, line 31 to page 2, line 1).

Regarding claim 14, the constellation of symbols comprises pulse code modulated symbols (page 1, lines 13-16).

Regarding claim 15, as stated previously, a pair of filters 140, 50 (vector arithmetic structures – VAS) adapt a respective one of in-phase or quadrature components to produced shaped components (page 1, line 31 to page 2, line 1).

Regarding claim 16, the outputs are combined 160 to produce an encoded bit stream (page 2, lines 1-4).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2-4, 8, 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over the instant application's disclosed prior art in view of Corleto et al (US 5,668,749).

Regarding claim 2, the instant application's disclosed prior art discloses an encoder as stated above in paragraph 5. The prior art does not disclose the VAS comprises a plurality of vector registers and a vector arithmetic unit (VAU). Corleto discloses in figure 1 a plurality of registers for storing precomputed values from memories 20 and 32 and a multi-task arithmetic unit 50 for processing the values from the memories and selected vectors from the in-phase and quadrature registers 12 and

14. It would have been obvious for one of ordinary skill in the art at the time of the invention to incorporate the teachings of Corleto into the instant application's disclosed prior art's encoder. Corleto discloses this method has reduced the complexity of the demodulation process thereby increasing efficiency and reducing hardware requirements (column 1, lines 55-65).

Regarding claims 3 and 4, the output of the multi-task arithmetic unit 50 is input to memory 32.

Regarding claim 8, figure 1 does not disclose a multiplication operation.

Regarding claims 11 and 12, the instant application's disclosed prior art discloses a method for using an encoder as stated above in paragraph 4. The prior art does not disclose the VAS comprises a plurality of vector registers and a vector arithmetic unit (VAU). Corleto discloses in figure 1 a plurality of registers for storing precomputed values from memories 20 and 32 and a multi-task arithmetic unit 50 for processing the values from the memories and selected vectors from the in-phase and quadrature registers 12 and 14. It would have been obvious for one of ordinary skill in the art at the time of the invention to incorporate the teachings of Corleto into the instant application's disclosed prior art's encoder. Corleto discloses this method has reduced the complexity of the demodulation process thereby increasing efficiency and reducing hardware requirements (column 1, lines 55-65).

Allowable Subject Matter

6. Claims 5 and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M. Burd whose telephone number is (571) 272-3008. The examiner can normally be reached on Monday - Thursday 9 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone

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number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kevin M. Burd

5/2/2005

KEVIN BURD
PRIMARY EXAMINER